

Claims:

1 1. A network for distributing a power signal in an optoelectronic
2 circuit, said network comprising:

3 a plurality of electrically conductive pathways forming at least one
4 level, wherein portions of said conductive pathways are interconnected;

5 a plurality of segments forming each level, wherein each segment of
6 a level is equal in length;

7 means for coupling said power signal from a primary input to a point
8 at the center of a first level;

9 terminal nodes coupled at the extremities of a last level for supplying
10 said power signal to devices that form at least a portion of said optoelectronic
11 circuit; and

12 wherein the number of segments connecting said primary input to
13 each of said terminal nodes is equal.

1 2. The invention defined in claim 1 wherein each level is at least one
2 H-shaped pattern comprising first and second parallel branches each having
3 a respective first and second midpoint, and a third branch interconnecting
4 said first and second midpoints, and wherein said center of said H-shaped
5 pattern is the midpoint of said third branch.

1 3. The invention defined in claim 1 wherein each level is at least one
2 X-shaped pattern comprising first and second branches each having a
3 respective first and second midpoint and interconnecting said first and
4 second branches at said midpoints, and wherein said center of said X-
5 shaped pattern is the intersection of said first and second branches.

1 4. The invention defined in claim 1 wherein said network is located on
2 an optoelectronic chip.

1 5. The invention defined in claim 1 wherein said terminal nodes are
2 optoelectronic devices.

1 6. The invention defined in claim 1 wherein said terminal nodes are
2 VCSELs.

7. A network for distributing a power signal in an optoelectronic circuit, said network comprising:

a plurality of separate electrically conductive pathways forming at least one level, wherein said pathways are joined only at a common point;

a plurality of segments forming each level, wherein each segment of a level is equal in length;

means for coupling said power signal from a primary input to a point at the center of a first level;

terminal nodes coupled at the extremities of a last level for supplying said power signal to devices that form at least a portion of said optoelectronic circuit; and

wherein the number of segments connecting said primary input to each of said terminal nodes is equal.

8. The invention defined in claim 8 wherein each level is at least one H-shaped pattern comprising first and second parallel branches each having a respective first and second midpoint, and a third branch interconnecting said first and second midpoints, and wherein said center of said H-shaped pattern is the midpoint of said third branch.

9. The invention defined in claim 7 wherein each level is at least one X-shaped pattern comprising first and second branches each having a respective first and second midpoint and interconnecting said first and second branches at said midpoints, and wherein said center of said X-shaped pattern is the intersection of said first and second branches.

10. A method of distributing a power signal to a plurality of terminal nodes on an optoelectronic circuit, the method comprising the steps of:

receiving the power signal from a primary input; and

directing said power signal to said plurality of terminal nodes using an H-tree network, said H-tree network including at least one level, wherein a first level is coupled to said primary input and a last level includes said plurality of

7 terminal nodes, each of said at least one level having a plurality of segments,
8 each segment of a respective plurality is equal in length; and
9 wherein a number of segments from said primary input to each of said
10 terminal nodes is equal.

1 11. The method of claim 10, wherein the directing step further includes
2 directing said power signal to said plurality of terminal nodes using an H-tree
3 network,

4 wherein said plurality of segments are configured into at least one H
5 pattern to form said at least one level; and

6 wherein said at least one level is configured into a hierarchical
7 succession of H patterns.